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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/091,215	03/05/2002	Setsuo Kobayashi	HITA.0166	6106

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EXAMINER	
PATTERSON, MARC A	

ART UNIT	PAPER NUMBER
1772	

DATE MAILED: 02/03/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/091,215	KOBAYASHI ET AL.	
	Examiner	Art Unit	
	Marc A Patterson	1772	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12/29/2003*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-5,10,12-16,18,19,21 and 42* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☐ Claim(s) *1-5,10,12-16,18-19,21 and 42* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

13)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

a) ☐ The translation of the foreign language provisional application has been received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

DETAILED ACTION

WITHDRAWN REJECTIONS

1. The 35 U.S.C. 112 second paragraph rejections of Claims 1 – 5, 10, 12 – 16, 18 – 19 and 21, of record on page 2 of the previous Action, are withdrawn.

The 35 U.S.C. 103(a) rejection of Claim 1 – 4, 10 and 12 – 15 as being unpatentable over Koike et al (U.S. Patent No. 5,796,458) in view of Matsuo et al (U.S. Patent No. 3,994,567), of record on page 3 of the previous Action, is withdrawn.

The 35 U.S.C. 103(a) rejection of Claim 5 as being unpatentable over Koike et al (U.S. Patent No. 5,796,458) in view of Matsuo et al (U.S. Patent No. 3,994,567) and further in view of Yoshikai et al (U.S. Patent No. 5,911,899), of record on page 5 of the previous Action, is withdrawn.

The 35 U.S.C. 103(a) rejection of Claims 16 and 18 – 19 as being unpatentable over Koike et al (U.S. Patent No. 5,796,458) in view of Matsuo et al (U.S. Patent No. 3,994,567) and further in view of Kelly (U.S. Patent No. 5,800,733), of record on page 5 of the previous Action, is withdrawn.

NEW REJECTIONS

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1 – 4, 10 and 12 – 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Koike et al (U.S. Patent No. 5,796,458) in view of Hanyu et al (U.S. Patent No. 5,325,219).

With regard to Claims 1 – 4 and 12, Koike et al disclose a liquid crystal display device (column 6, lines 20 – 25) comprising substrates disposed in opposition to each other (glass plates; column 6, lines 26 – 34) with a liquid crystal being interposed therebetween (column 6, lines 26 – 38), a pixel electrode (column 6, lines 54 – 60), a counter electrode (common electrode comprising indium tin oxide, therefore a transparent conductive layer generating an electric field between itself and the pixel electrode; column 6, lines 39 – 46), alignment films disposed in contact with the liquid crystal on the liquid crystal side surfaces of the respective substrates (therefore an insulating film having uniaxial orientation properties; column 7, lines 5 – 11), each of the alignment films being made of a material containing a diamine structure (polyimide comprising diamine component; column 12, lines 39 – 55). Koike et al fail to disclose a liquid crystal which if formed from a diamine comprising diphenylamine.

Hanyu et al teaches the use of diphenylamine (column 11, lines 10 – 45) in the making of an alignment film (column 4, lines 52 – 57) for the purpose of obtaining an alignment film which produces a large optical contrast (column 4, lines 41 – 52). The desirability of providing for a diamine comprising diphenylamine (claimed Structure 3) in Koike et al, which is an alignment film, would therefore be obvious to one of ordinary skill in the art.

It therefore would have been obvious for one of ordinary skill in the art at the time Applicant's invention was made to have provided for a diamine comprising diphenylamine

(claimed Structure 3) in Koike et al in order to obtain an alignment film which produces a large optical contrast as taught by Hanyu et al.

With regard to Claim 10, as stated above the insulating film disclosed by Koike et al is between the counter electrode and other electrode; the other electrode is a pixel electrode, as stated above, and therefore includes electrodes which extend in two directions.

With regard to Claim 13, Koike et al fail to disclose a liquid crystal having a resistivity of 1.0×10^{10} ohms or more. However Koike et al disclose a liquid crystal having a resistivity of of at least a fraction of 1 ohm (the liquid crystal is part of an electrode laminate; column 6, lines 26 – 46). Therefore, the resistivity would be readily determined through routine optimization by one having ordinary skill in the art depending on the desired end use of the product. It therefore would be obvious for one of ordinary skill in the art to vary the resistivity, since the resistivity would be readily determined through routine optimization by one having ordinary skill in the art depending on the desired end result as shown by Koike et al, in the absence of unexpected results. *In re Boesch and Slaney, 205 USPQ 215 (CCPA 1980).*

With regard to Claims 14 – 15, Hanyu et al teach an alignment film thickness of 100 nm (0.1 microns; column 19, lines 16 – 33 of Hanyu et al).

4. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Koike et al (U.S. Patent No. 5,796,458) in view of Hanyu et al (U.S. Patent No. 5,325,219) and further in view of Yoshikai et al (U.S. Patent No. 5,911,899).

Koike et al and Hanyu et al disclose a liquid crystal display comprising a conductive layer comprising indium tin oxide as discussed above. Koike et al and Hanyu et al fail to disclose a conductive layer comprising indium zinc oxide.

Yoshikai et al teach that indium zinc oxide is equivalent to indium tin oxide as a conductive layer (column 8, lines 3 – 7) for a liquid crystal display (column 1, lines 5 – 13) for the purpose of using a layer which is transparent (column 8, lines 3 – 7). The desirability of providing for indium zinc oxide in Koike et al and Hanyu et al, which is a liquid, crystal display, would therefore be obvious to one of ordinary skill in the art.

It therefore would have been obvious for one of ordinary skill in the art at the time Applicant's invention was made to have provided for indium zinc oxide in Koike et al and Hanyu et al in order to use a layer which is transparent as taught by Yoshikai et al.

5. Claims 16 and 18 – 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Koike et al (U.S. Patent No. 5,796,458) in view of Hanyu et al (U.S. Patent No. 5,325,219) and further in view of Kelly (U.S. Patent No. 5,800,733).

Koike et al and Hanyu et al disclose a liquid crystal display as discussed above. With regard to Claims 16 and 18 – 19, Koike et al and Hanyu et al fail to disclose a liquid crystal comprising difluorobenzene and dicyanobenzene.

Kelly teach the use of difluorobenzene and dicyanobenzene (column 29, lines 58 – 67) in the making of a liquid crystal optical component (column 1, lines 4 – 7) for the purpose of obtaining an optical component which has a viscosity at normal processing temperatures that is not too high (column 1, lines 62 – 67; column 2, lines 1 – 3). The desirability of providing for

difluorobenzene and dicyanobenzene in Koike et al and Hanyu et al, which is a liquid crystal display, would therefore be obvious to one of ordinary skill in the art.

It therefore would have been obvious for one of ordinary skill in the art at the time Applicant's invention was made to have provided for difluorobenzene and dicyanobenzene in Koike et al and Hanyu et al in order to obtain an optical component which has a viscosity at normal processing temperatures that is not too high as taught by Kelly.

6. Claim 42 is rejected under 35 U.S.C. 103(a) as being unpatentable over Koike et al (U.S. Patent No. 5,796,458) in view of Hanyu et al (U.S. Patent No. 5,325,219) and further in view of Abe et al (U.S. Patent No. 5,674,575).

Koike et al and Hanyu et al disclose a liquid crystal display comprising an alignment film comprising diamine as discussed above. Koike et al and Hanyu et al fail to disclose a diamine comprising claimed Structure 1.

Abe et al teach the use of claimed Structure 1 (column 7, structure 34) in the making of an alignment film (column 4, lines 6 – 13) for the purpose of obtaining an alignment film which having a stripping load of 4.0 gf or more (column 4, lines 6 – 13). The desirability of providing for a diamine comprising Structure 1 in Koike et al and Hanyu et al, which is an alignment film, would therefore be obvious to one of ordinary skill in the art.

It therefore would have been obvious for one of ordinary skill in the art at the time Applicant's invention was made to have provided for a diamine comprising claimed Structure 1 in Koike et al and Hanyu et al in order to obtain an alignment film which having a stripping load of 4.0 gf or more as taught by Abe et al.

ANSWERS TO APPLICANT'S ARGUMENTS

7. Applicant's arguments regarding the 35 U.S.C. 112 second paragraph rejections of Claims 1 – 5, 10, 12 – 16 and 18 – 19, 35 U.S.C. 103(a) rejection of Claim 1 – 4, 10 and 12 – 15 as being unpatentable over Koike et al (U.S. Patent No. 5,796,458) in view of Matsuo et al (U.S. Patent No. 3,994,567), 35 U.S.C. 103(a) rejection of Claim 5 as being unpatentable over Koike et al (U.S. Patent No. 5,796,458) in view of Matsuo et al (U.S. Patent No. 3,994,567) and further in view of Yoshikai et al (U.S. Patent No. 5,911,899), and 35 U.S.C. 103(a) rejection of Claims 16 and 18 – 19 as being unpatentable over Koike et al (U.S. Patent No. 5,796,458) in view of Matsuo et al (U.S. Patent No. 3,994,567) and further in view of Kelly (U.S. Patent No. 5,800,733), of record in the previous Action, have been considered and have been found to be persuasive. The rejections are therefore withdrawn. The new 35 U.S.C. 103(a) rejection of Claims 1 – 4, 10 and 12 – 15 as being unpatentable over Koike et al (U.S. Patent No. 5,796,458) in view of Hanyu et al (U.S. Patent No. 5,325,219), 35 U.S.C. 103(a) rejection of Claim 5 as being unpatentable over Koike et al (U.S. Patent No. 5,796,458) in view of Hanyu et al (U.S. Patent No. 5,325,219) and further in view of Yoshikai et al (U.S. Patent No. 5,911,899), 35 U.S.C. 103(a) rejection of Claims 16 and 18 – 19 as being unpatentable over Koike et al (U.S. Patent No. 5,796,458) in view of Hanyu et al (U.S. Patent No. 5,325,219) and further in view of Kelly (U.S. Patent No. 5,800,733) and 35 U.S.C. 103(a) rejection of Claim 42 as being unpatentable over Koike et al (U.S. Patent No. 5,796,458) in view of Hanyu et al (U.S. Patent No. 5,325,219) and further in view of Abe et al (U.S. Patent No. 5,674,575) above are directed to amended Claims 1 – 5, 10, 12 – 16, 18 – 20 and newly submitted Claim 42.

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Conclusion

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marc Patterson, whose telephone number is (703) 305-3537. The examiner can normally be reached on Monday through Friday from 8:30 AM to 5:00 PM. If attempts to reach the examiner by phone are unsuccessful, the examiner's supervisor, Harold Pyon, can be reached at (703) 308-4251. FAX communications should be sent to (703) 872-9310. FAXs received after 4 P.M. will not be processed until the following business day.

Marc A. Patterson, PhD.
Marc Patterson
Art Unit 1772

HAROLD PYON
SUPERVISORY PATENT EXAMINER
1772

1/26/04